What is claimed is:

1. In a receiver that receives a modulated signal having multiple levels and having an equalizer with plural equalization settings for compensating for distortion in the received signal, a method of selecting one of the plural equalization settings that provides an optimum compensation for the distortion, comprising:

> (A) for each one of the equalizer settings:
>
> > setting the equalizer to the one setting;
> >
> > defining valid regions encompassing each of the multiple levels of said modulated signal and invalid regions not encompassing the multiple levels;
> >
> > computing a first metric comprising a count of samples within said invalid regions;
> >
> > computing a second metric comprising differences less than a predetermined threshold between pairs of samples falling within the same valid region;
> >
> > combining the first and second metrics to produced a combined metric for said one setting;
>
> (B) choosing the equalizer setting corresponding to the best combined metric.

2. The method of Claim 1 wherein said invalid regions lie generally between the valid regions.

3. The method of Claim 1 wherein each valid region includes a range of amplitudes within a predetermined fraction of the amplitudes of the corresponding multiple level.

4. The method of Claim 1 wherein each invalid region includes a range of amplitudes deviating by more than a predetermined fraction of a peak amplitude from the corresponding multiple level.

5. The method of Claim 3 wherein the predetermined threshold corresponds to a fraction less than the predetermined fraction.

6. The method of Claim 5 wherein the predetermined fraction corresponds to 10% and the predetermined threshold corresponds to 5%.

7. The method of Claim 1 wherein each of the pairs of samples falling within the valid region comprise two samples occurring successively.

8. The method of Claim 7 wherein a sample intervening chronologically between the two successive samples but not falling within the same valid region is ignored for purposes of determining successive samples.

9. The method of Claim 1 wherein the first metric is a measure of the deviation of samples from valid signal levels of the multistate signal and the second metric is a measure of the consistency of samples about each valid signal level.

10. The method of Claim 1 wherein the combined metric is a difference between said first and second metrics.

1   11.   The method of Claim 10 wherein the best combined

2   metric is the least positive or most negative metric.

1   12.   The method of Claim 1 wherein the combined metric is

2   a ratio between said first and second metrics.

1   13.   The method of Claim 1 wherein each equalizer setting

2   corresponds to a different transfer function of the

3   equalizer.

1   14.   The method of Claim 1 wherein each transfer function

2   corresponds to a unique set of poles and zeroes

3   corresponding to a particular reactance.

1   15.   The method of Claim 1 wherein the step of computing

2   the second metric is carried out for sample pairs in each

3   of the valid regions, the number of differences not

4   exceeding the threshold being summed across all valid

5   regions.

1   16.   A receiver that receives a modulated signal having

2   multiple levels, said receiver comprising:

3   an equalizer with plural equalization settings for

4   compensating for distortion in the received signal; and

5   an adapter for selecting one of the plural

6   equalization settings that provides an optimum

7   compensation for the distortion at the output of the

8   equalizer, said adapter comprising:

9   means for setting the equalizer to the one

10   setting;

11 means for defining valid regions encompassing
12 each of the multiple levels of said modulated signal and
13 invalid regions not encompassing the multiple levels;
14 means for computing a first metric comprising a
15 count of samples within said invalid regions;
16 means for computing a second metric comprising
17 differences less than a predetermined threshold between
18 pairs of samples falling within the same valid region;
19 means for combining the first and second
20 metrics to produced a combined metric for said one
21 setting and choosing the equalizer setting corresponding
22 to the best combined metric.

1 17. The receiver of Claim 16 wherein said invalid
2 regions lie generally between the valid regions.

1 18. The receiver of Claim 16 wherein each valid region
2 includes a range of amplitudes within a predetermined
3 fraction of the amplitudes of the corresponding multiple
4 level.

1 19. The receiver of Claim 16 wherein each invalid region
2 includes a range of amplitudes deviating by more than a
3 predetermined fraction of a peak amplitude from the
4 corresponding multiple level.

1 20. The receiver of Claim 18 wherein the predetermined
2 threshold corresponds to a fraction less than the
3 predetermined fraction.

21. The receiver of Claim 20 wherein the predetermined fraction corresponds to 10% and the predetermined threshold corresponds to 5%.

22. The receiver of Claim 16 wherein each of the pairs of samples falling within the valid region comprise two samples occurring successively.

23. The receiver of Claim 22 wherein a sample intervening chronologically between the two successive samples but not falling within the same valid region is ignored for purposes of determining successive samples.

24. The receiver of Claim 16 wherein the first metric is a measure of the deviation of samples from valid signal levels of the multistate signal and the second metric is a measure of the consistency of samples about each valid signal level.

25. The receiver of Claim 16 wherein the combined metric is a difference between said first and second metrics.

26. The receiver of Claim 25 wherein the best combined metric is the least positive or most negative metric.

27. The receiver of Claim 16 wherein the combined metric is a ratio between said first and second metrics.

1   28.   The receiver of Claim 16 wherein each equalizer

2   setting corresponds to a different transfer function of

3   the equalizer.

1   29.   The receiver of Claim 28 wherein each transfer

2   function corresponds to a unique set of poles and zeroes

3   corresponding to a particular reactance.